

# NAVAL METEOROLOGY AND OCEANOGRAPHY ANTI-SUBMARINE WARFARE

PROVIDING AN ASYMMETRIC WARFIGHTING ADVANTAGE



**ASW Warfare:** The Naval Meteorology and Oceanography Command provides Anti-Submarine Warfare commanders with critical environmental knowledge that defines the battlespace and helps warfighter planning and operations. The need for this real-time infusion of environmental knowledge is especially important in modern warfighting as ASW is increasingly likely to occur in littoral regions where conditions can change rapidly and dramatically.

Contributions to ASW consist of an unequaled expertise in oceanography and meteorology, a variety of high-tech sensing tools, powerful supercomputers and highly skilled personnel all working together to form a flexible network of warfighter support.

**Characterizing the Battlespace:** There are several environmental factors that together define the ASW battlespace and help warfighters determine the right platform, weapons, targets, settings, tactics and timing necessary for maximum effectiveness. Naval oceanographers monitor and analyze these variables and provides data directly to decision-makers. These environmental factors include:

- acoustics and ambient noise;
- bathymetry;
- temperature and salinity;
- bottom-mapping;
- tides and currents.

The Naval Meteorology and Oceanography Command is effectively aligned to provide skills and resources for ASW mission success. Important supporting assets are:

- **Skilled Personnel Deployed Worldwide.** Military and civilian personnel are deployed worldwide to provide a flexible support team to warfighters. Littoral Warfare Teams combine on-scene and reach back personnel to collect, consolidate and interpret data from a variety of sources and sensors for delivery to decision-makers.
- **High-Performance Computing.** With the Major Shared Resource Center, advanced models, high bandwidth data transfers and supporting databases information can be processed and delivered quickly to warfighters.
- **Advanced Sensing Technology.** Gliders, AUVs, UUVs and towed sensors define the battlespace for ASW warfighters and aid planning and operations. The unmanned sensors can improve littoral surveying, especially in denied areas, while providing real-time data over extended periods.
- **Comprehensive Data Collection.** Data that supports warfighting is collected from multiple sources including: Fleet Survey Teams on T-AGS 60 ships and HSLs, buoys, satellites, remotely operated unmanned sensors and other sources.
- **ASW-Specific Training.** Naval oceanographers are trained on tactical oceanography as it relates to ASW.

**For more information:** CNMOC Public Affairs, 228-688-4188 or [pao@cnmoc.navy.mil](mailto:pao@cnmoc.navy.mil).

